Quantum dots in microcavities: from single spins to engineered states of light

Steindl, P.

Stellingen

Behorend bij het proefschrift

Quantum dots in microcavities:

From single spins to engineered quantum states of light

1. The cross-polarization extinction ratio of linear polarizers can be higher than 10^9.
   Chapter 3 of this thesis

2. Replacing homodyne detection with photon correlation makes assessing the successful addition of a single photon to a coherent state easier. *Chapter 5 of this thesis*

3. By developing close-to-optimal sources of single photons, we enter the age of engineering quantum states of light from scratch. *Chapter 6 of this thesis*

4. In a sketch of polarization-sensitive optical experiments, mirrors should always be shown.
   Chapter 3 of this thesis

5. Benelajla et al. discourage developing sophisticated microscope objectives for high polarization extinction confocal microscopy, despite their experiments were performed in a lens-free setup. *Benelajla et al., Physical Review X 11, 021007 (2021).*

6. Tomm et al. show that there are no limits to single-photon brightness.
   Tomm et al., Nature Nanotechnology 16, 399 (2021).

7. High-temperature compatible permanent magnets used in the industry have hidden potential also in the quantum technology market, which has been overlooked by Severson et al. *Severson et al., Heliyon 8, e11773 (2022).*

8. Serendipitously used effects trigger technology development even without their proper identification. *Kuhlmann et al., Rev. Sci. Instrum. 84, 073905 (2013).*

9. Rich societies thrive from complaints.

10. Soon, photons will need loss insurance.

11. Both photonics and worm composting provide resource-efficient solutions to slowing down climate change.

Petr Steindl
Leiden, 5 July 2023